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CLAIMS

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- 1. A first device (MD1-3) for communicating with other devices using a frequency hopping wireless interface, the first device being arranged to send a sequence of messages (ID) each on a different frequency, for finding other devices (AP1-3) within range, and being arranged to listen for a response during a subsequent response window, on one or more response frequencies, being a subset of less than all possible response frequencies, and to receive return information from the other devices without needing to set up a frequency hopping connection, the response window having a duration sufficient to receive more than one response.
- 2. The first device of claim 1, wherein the sequence of frequencies of the messages is predetermined and related to the time of the start of the response window.
 - 3. The first device of claim 1 or 2, being a mobile device (MD1-3).
- 4. The first device of any preceding claim, the sequence of messages having an indication (RCI) of a response channel.
 - 5. The first device of any preceding claim, the return information having received signal strength information (RSSI) from the other device or devices.
 - 6. The first device of any preceding claim, the return information having location information from the other device or devices.
 - 7. The first device of any preceding claim, the return information including frequency hopping and synchronisation information (FHS).
 - 8. The first device of any preceding claim, the wireless interface being compatible with the Bluetooth standard.

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- 9. The first device of any preceding claim, the other device being a network access point (AP1-3).
- 10. The first device of claim 4 or any claim depending on claim 4, the response channel indication comprising a four bit code.

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- 11. The first device of claim 4 or any claim depending on claim 4, the response channel indication being altered cyclically.
- 12. The first device of any preceding claim, incorporating a mobile phone or mobile personal computer (PDA).
- 13. An other device (AP1-3) for use with the first device (MD1-3) of any preceding claim, the other device being arranged to listen for one or more of the messages, to determine a time of the response window after the sequence of messages, and to send return information on that response frequency to the first device without needing to establish a frequency hopping connection.
- 14. The other device of claim 13, the messages including an indication (RCI) of a response channel, and the other device being arranged to use the response channel indication to send a response.
- 15. A method of communicating between a first device (MD1-3) and other devices (AP1-3) having a frequency hopping wireless interface, the method having the steps of:

sending from the first device a sequence of messages (ID) each on a different frequency, for finding other devices within range,

listening at the first device on one response frequency or on a subset of less than all possible response frequencies, during a response window having a duration sufficient to receive more than one response,

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determining at each of the other devices in range, a time of the response window after the sequence of messages, and

sending a response during the response window, from each of the other devices in range, to the first device, containing return information without needing to set up a frequency hopping connection.

- 16. A method of offering a service on mobile devices (MD1-3), using return information sent to mobile devices by the method of claim 15, where the first device is a mobile device.
- 17. The method of claim 16, the return information having location information, the service being a location based service, and the mobile device incorporating a mobile phone.
- 18. A group of access points, each incorporating an other device (AP1-3) of claim 13, and coupled to provide location information, or access to other telecommunications networks.
- 19. A first device (MD1-3) for communicating with other devices (AP1-3)
 20 using a frequency hopping wireless interface, the first device being arranged to send a sequence of messages (ID) each on a different frequency, for finding other devices within range, the messages including an indication (RCI) of a response channel, and being arranged to listen for a response during a subsequent response window, on one response frequency, and to receive return information from the other devices without needing to set up a frequency hopping connection.
 - 20. Software for a first device (MD1-3) for use in the method of claim 15, for carrying out the steps of:
 - sending from the first device a sequence of messages (ID) each on a different frequency, for finding other devices (AP1-3) within range, and

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listening at the first device on one response frequency or on a subset of less than all possible response frequencies, during a response window having a duration sufficient to receive more than one response.